NHS BLOOD AND GROUP TRANSPLANT

CARDIOTHORACIC ADVISORY– LUNG

SURVIVAL FROM LISTING

INTRODUCTION

1. Section 7 of the Annual Report on Lung Transplantation examines the survival from listing for patients registered for a lung transplant. Survival time is defined as the time from joining the transplant list, to death, which may occur while waiting on the transplant list, or post-transplant, thus survival from listing includes both waiting time and post-transplant survival time if applicable. The centre specific survival rates are risk-adjusted for a number of factors and presented in a funnel plot. Full details of the analysis can be found in the Annual Report on Lung Transplantation on the ODT Clinical Site www.odt.nhs.uk.

2. This report explores two changes to the survival from listing analysis which were prompted by feedback from the clinical community:

    a. Firstly, to align the inclusion period for registrations with the inclusion periods for the post-transplant survival analysis in the same report.

    b. Secondly, to re-classify removals due to deteriorating condition as “deaths” instead of censored observations.

METHODS

3. For the purposes of this report, the cohort of registrations used in the 2022/23 Annual Report on Lung Transplantation was modified to incorporate these changes. This cohort includes all adult patients (age ≥ 18) registered for the first time for a lung only transplant between 1 January 2011 and 31 December 2022, with no missing data on risk-factors. The time period for registrations was then restricted to 1 April 2018 - 31 March 2022 for the one-year survival analysis, and 1 April 2014 - 31 March 2018 for five-year survival analysis, matching the post-transplant survival section of the 2022/23 report. Due to these shorter and more recent time periods, the factor “era” was removed from the list of risk-factors. Secondly, reasons for removal were examined and where code 12 ("condition deteriorated/patient unfit/medical contra-indication") had been reported, these patients were re-classified as equivalent to deaths (impacting approximately 6% of the cohort).

RESULTS

4. The results of the changes to the one-year and five-year patient survival from listing analyses are presented in **Table 1** and **Figure 1**, and **Table 2** and **Figure 2**, respectively. The tables present the unadjusted and risk-adjusted patient survival rates for each centre. The figures show that all one-year risk-adjusted rates fall within the funnel, except for Manchester, which exceeds the upper 95.0% confidence limit, indicating a higher survival rate, and Birmingham, which falls below the lower 95.0% confidence limit, indicating a lower survival rate. All five-year rates fall within the funnel, except for Birmingham, which falls below the lower 99.8% confidence limit, indicating lower survival from listing at this centre.

Table 1 1 year patient survival from listing for patients registered between 1 April 2018 to 31 March 2022

Centre	Number of registrations	% 1 year survival (95% CI) Unadjusted		Risk-adjusted	
Birmingham	115	68.7	(59.3 - 76.3)	67.2	(54.5 - 76.3)
Harefield	169	80.9	(74.1 - 86.1)	76.6	(66.8 - 83.4)
Manchester	118	85.5	(77.7 - 90.7)	85.8	(77.2 - 91.2)
Newcastle	182	67.9	(60.5 - 74.2)	72.1	(64.0 - 78.5)
Papworth	188	77.8	(71.1 - 83.2)	78.5	(70.8 - 84.2)
UK	**772**	**75.9**	**(72.8 - 78.8)**		

Centre has reached the lower 99.8% confidence limit
Centre has reached the lower 95% confidence limit
Centre has reached the upper 95% confidence limit
Centre has reached the upper 99.8% confidence limit

Table 2 5-year patient survival from listing patients registered between 1 April 2014 to 31 March 2018

Centre	Number of registrations	% 5-year survival (95% CI) Unadjusted		Risk-adjusted	
Birmingham	149	35.1	(27.3 - 43.0)	26.2	(9.6 - 39.7)
Harefield	344	49.0	(43.5 - 54.3)	45.2	(36.3 - 52.8)
Manchester	144	40.1	(32.1 - 48.0)	46.0	(33.3 - 56.3)
Newcastle	249	39.8	(33.6 - 46.0)	42.5	(32.4 - 51.0)
Papworth	215	43.3	(36.5 - 49.9)	46.8	(36.3 - 55.5)
UK	**1101**	**42.7**	**(39.7 - 45.7)**		

Centre has reached the lower 99.8% confidence limit
Centre has reached the lower 95% confidence limit
Centre has reached the upper 95% confidence limit
Centre has reached the upper 99.8% confidence limit

Figure 1: One-Year Survival Analysis

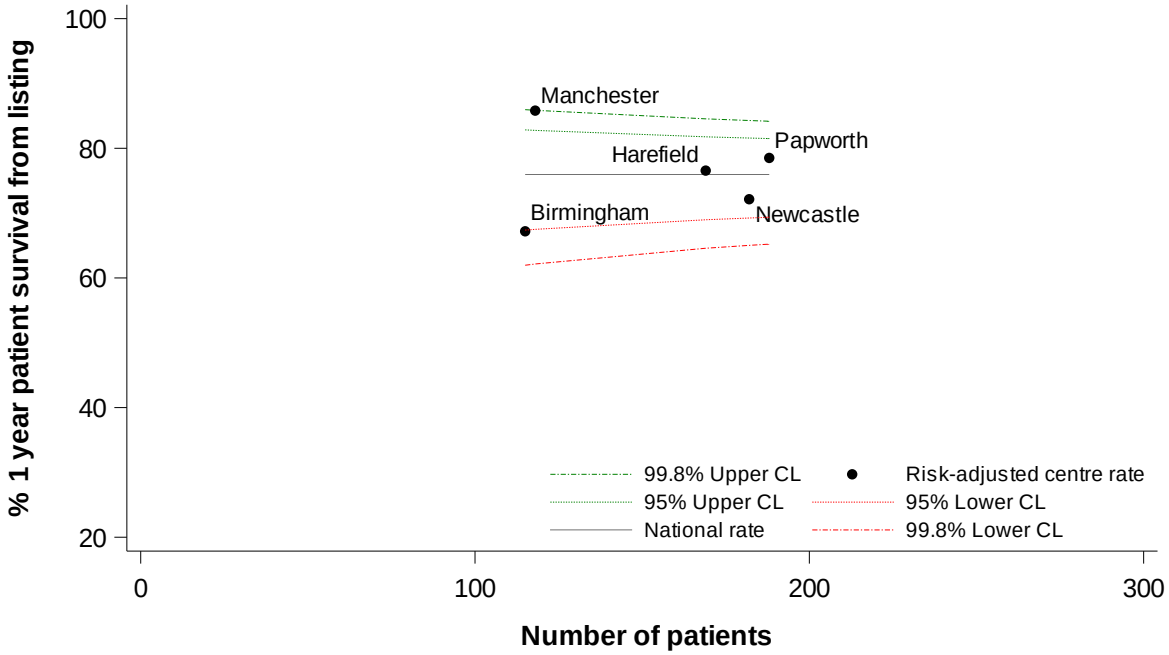
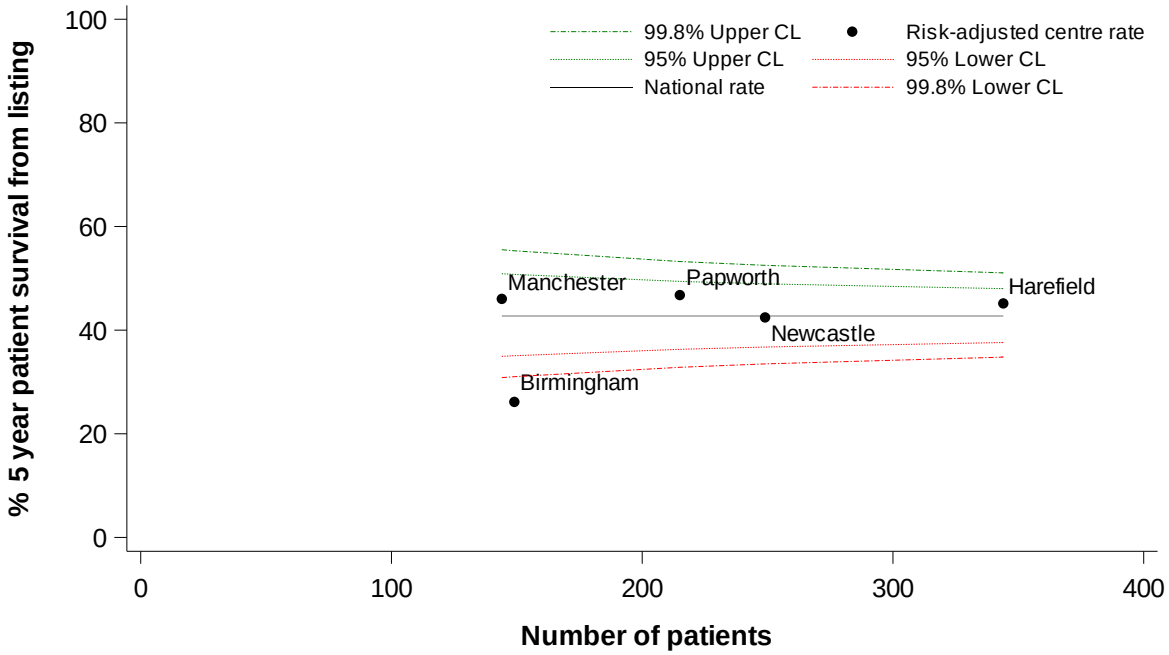


Figure 2: Five-Year Survival Analysis



FURTHER WORK

5. If agreed by CTAG, these changes will be implemented in the upcoming 2023/24 annual reports. The equivalent changes will be made to the heart report.

6. A review of the risk factors included in the survival from listing models will be undertaken and is expected to be completed and shared at the next CTAG Lungs meeting. The current factors, in the lung analysis, are: age, gender, ethnicity, blood group, BMI, primary disease, previous thoracotomy and in hospital status at registration.

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